IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Attorney Docket No.	00497-08	*Customer No.*	34444
Applicant:	Zhonglin Hao, et al.	*Art Unit:*	1654
Serial No.	10/809,654	*Examiner:*	Billy D. Chism
Filing Date:	March 25, 2004		
Title:	Sperm Specific Proteins		

Certificate of Mailing Under 37 CFR §1.8

I hereby certify that this correspondence is being deposited with the United States Postal Service using First Class Service under 37 C.F.R. § 1.8 on the date indicated below and is addressed to Mail Stop Amendment, Commissioner for Patents, PO Box 1450, Alexandria, VA 22313-1450.

Date: August 16, 2006

Sue Ann Carr

Declaration of Zhonglin Hao et al., under 37 C.F.R. § 1.131

Mail Stop Amendment
Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Sir:

We, Zhonglin Hao, John C. Herr, Friederike L. Jayes, Jagathpala Shetty, and Michael J. Wolkowicz, declare:

1. We are the inventors of the above-referenced patent application.

2. Copies of each of our curriculum vitaes are provided herewith and are labeled Exhibit A.

3. We have read and understand the Office Action dated February 22, 2006.

4. We understand that the Examiner has rejected claims 19, 20, and 29, drawn to a peptide having SEQ ID NO:16, or modifications thereof, as allegedly anticipated by U.S. 2002/0102604 (Edwards et al.) under 35 U.S.C. § 102(e). This Declaration is being submitted with a response to the Office Action dated February 22, 2006. Accompanying this Declaration are sixty-eight (68) pages of evidentiary documents labeled Exhibits 1-68, respectively. Copies of our curriculum vitaes, labeled Exhibit A, are also included with the Declaration.

5. We present below a description of studies and their dates performed by us showing that the present application identified and characterized a protein we called C58, which has the amino acid sequence SEQ ID NO:16. By this 37 C.F.R. § 1.131 Declaration, We, Zhonglin Hao, John C. Herr, Friederike L. Jayes, Jagathpala Shetty, and Michael J. Wolkowicz, inventors of the present invention, assert that the presently claimed invention was invented before Edwards et al. was filed. This Declaration and the accompanying Exhibits (1-68) submitted herewith serve to document and verify the fact that we invented C58 (SEQ ID NO:16) before Edwards et al. even filed their first provisional application. The cited Edwards application publication claims the benefit of a provisional application filed December 8, 1999. Based on the discussion presented below, and the Exhibits submitted herewith, it can be seen that we invented by at least October 5^{th,} 1999, which is at least two months before the December 8, 1999 filing date of the provisional application from which the Edwards application publication claims priority. Therefore, the instant invention for patent as claimed by the Applicants cannot be anticipated under 35 U.S.C. § 102(e) by Edwards et al. Examiner is reminded that the present application is a Divisional application and that two other proteins were prosecuted in the parent application (now issued) encompassing the peptide of SEQ ID NO:2 and the nucleic acid sequence encoding SEQ ID NO:2, and another active Divisional application encompassing SEQ ID NO:9. All of the work encompassing the various proteins was occurring simultaneously and was included in the provisional application we filed January 19, 2000.

6. **The evidentiary documentation** provided with the Declaration comprises 68 (sixty-eight) photocopied pages of the laboratory notebook of one of us, Dr. Jagathpala Shetty. The 68 pages were all dated at the time of data entry and are labeled as Exhibits 1 through 68. All of the laboratory notebook pages also indicate the name of the person entering the data, namely Jagathpala Shetty. The pages are dated from August 12, 1999 to December 18, 1999.

The invention disclosure was then prepared by the Applicants and submitted to the University of Virginia Patent Foundation. A provisional patent application was then prepared and filed on January 19, 2000. Therefore, the entire process of identifying the protein called C58, isolating it, sequencing it, performing bioinformatic analyses, protein expression and northern blot analyses, was performed from August 12, to December 18, 1999. The data were then collated, an Invention Disclosure was prepared, and a patent application based on the Invention Disclosure was prepared and filed within a month of the last dated laboratory notebook page submitted herewith.

6. **Timetable of Experiments**: The experiments related to identifying and isolating C58, sequencing the peptide named C58, which has the sequence of SEQ ID NO:16, and characterizing C58, are summarized chronologically below to demonstrate when the sequence was first discovered, and to demonstrate diligence in completing the invention. Note that the application as filed included the identification, isolation, sequencing, and characterization of C58, as well as two other proteins. However, it should be particularly noted that the complete nucleotide and amino acid (SEQ ID NO:16) sequences of C58 are first demonstrated in the laboratory notebook of Dr. Shetty on October 5 and 6, 1999, on pages 82-84 (Exhibits 35-37).

7. **The studies to identify and isolate C58** were performed as follows: Testis extracts were subjected to two-dimensional gel electrophoresis and spots of interest were identified. The spot identified as C58 (see Exhibit 1) was cored out, subjected to tryptic digest, and microsequenced. The first page of evidence supplied with the Declaration (Exhibit 1; page 39 of Dr. Shetty's laboratory notebook, dated August 12, 1999) has a copy of an image of a two-dimensional gel which is labeled with numbers to identify locations of various proteins, one of which was C58, which had partially sequenced on August 11, 1999, including C58 (the name of the protein comprising SEQ ID NO:16). The spots had been cored from the gel, subjected to tryptic digests, and subjected to microsequencing, the results of which are indicated in Exhibit 2, dated August 15, 1999. Exhibit 2 demonstrates the four peptide tryptic digest components of spot/band C58. Exhibit 3 (page 42 of the notebook, dated August 15, 1999) depicts the use of an EST chosen based on the tryptic digests. Exhibit 4 demonstrates the PCR strategy using the EST and Exhibit 5 demonstrates the sequence of the PCR-derived EST partial sequence for C58. Exhibit 6 (page 50, dated September 7, 1999) summarizes the cloning of C58 and the beginning of several weeks work of screening the C58 library (Exhibits

6 to 79; dated September 7, 1999 to September 30, 1999). To summarize, Exhibits 4 to 34, comprising photocopies of Dr. Shetty's laboratory notebook pages (pages 43, 48, 50-54, 56-75, and 77-80, respectively; dated August 26, 1999 to September 25, 1999), demonstrate a series of experiments and data involving further preparation and isolation of the C58 nucleic acid and peptide.

8. **The studies to sequence C58** were performed as follows: A nucleic acid sequence which encodes the C58 peptide was obtained from the studies described in Exhibits 1-34, and that sequence is demonstrated in Exhibit 35 (page 82 of the notebook, dated **October 5, 1999**). The sequence for the nucleic acid encoding the amino acid sequence of SEQ ID NO:16 (C58 protein) included the ORF of the sequence. The sequence was examined and Exhibit 37 (page 84 of the notebook, dated **October 6, 1999**) presents the deduced 124 amino acid residue sequence of SEQ ID NO:16. Therefore, it can be seen that the nucleic acid sequence encoding SEQ ID NO:16 was obtained by **October 5, 1999,** and at that point the nucleic acid sequence was capable of being used to deduce the amino acid sequence, which amino acid sequence (i.e., SEQ ID NO:16) was indeed demonstrated on Exhibit 37, dated **October, 6, 1999**. These two dates disclosing the C58 sequences are much **earlier** than the December 8, 1999 filing date of the Edwards provisional application.

9. **Bioinformatic Analyses and further characterization of C58**: Next, a series of bioinformatic analyses were performed to compare the new C58 nucleic acid and amino acid (SEQ ID NO:16) sequences to other proteins known in the art and to further characterize the protein. Then, a series of experiments and analyses were performed to ensure that the complete protein had been isolated and sequenced, expression vectors were prepared and analyzed, cells were transformed with the expression vectors and analyzed (see Exhibits 38-52, summarizing experiments and analyses performed until November 23, 1999). For example, Exhibit 52 (the carbon copy page of page 100, with a sequence pasted in; dated November 23, 1999), summarizes a series of analyses which had been performed and demonstrates the sequence alignment of C58 with proteins of the Ly6/UPAR family of proteins. Exhibit 53 is a photocopy of a page from a new notebook (page 1, dated November 29, 1999), summarizing a series of experiments analyzing protein expression from the bacterial vector. These experiments are illustrated in Exhibit 53 to Exhibit 63 (comprising notebook pages 1-6, and 9-13, respectively; dated November 29, 1999 to December 15, 1999).

10. **Verification that C58 is testis-specific**: A series of experiments were performed to verify that the newly discovered C58 protein, which was discovered in testis, was indeed a testis specific protein. To that end, a series of probes and reagents were prepared and Northern blot analyses were performed and indeed demonstrated testis specific expression of C58. The results of these experiments are summarized in Exhibits 64 to 68 (comprising photocopies of Dr. Shetty's laboratory notebook pages 14-18, respectively, dated December 15 to December 18, 1999).

11. **Preparation of Invention Disclosure and Preparation and Filing of a Provisional Patent Application**: The C58 (SEQ ID NO:16) experiments performed as of December 18, 1999 were then included as part of an invention disclosure, along with the results of two other proteins which were included in the original application. The invention disclosure was submitted to the University of Virginia Patent Foundation, reviewed, and prepared and filed as a provisional patent application on January 19, 1999. Thus, it can be seen that from the time of the last C58 experiment included in the application, the time required to prepare and submit the invention disclosure and prepare and file a provisional patent application was only one month. These acts all indicate diligence in inventing, reducing to practice, and filing an application based on the three proteins which were included in the original provisional application.

Based on the description provided above, and the documentary evidence provided herewith in the form of 68 Exhibits, we assert that the present invention was clearly not anticipated by Edwards et al. under 35 U.S.C. § 102(e). We further assert that the diligence requirement was met in all aspects of identifying, sequencing, and characterizing the C58 protein (SEQ ID NO:8), preparing an invention disclosure, and preparing and filing a provisional patent application.

We further declare that all statements made herein of our own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Zhonglin Hao _____ Date

John C. Herr _____ Date

Friederike L. Jayes June 14 2006
Friederike L. Jayes Date

Jagathpala Shetty _____ Date

Michael Wolkowicz _____ Date

Zhonglin Hao — 6/30/06

Zhonglin Hao — Date

John C. Herr — 6/12/06

John C. Herr — Date

Friederike L. Jayes — Date

Jagathpala Shetty — 06/12/06

Jagathpala Shetty — Date

Michael J. Wolkowicz — 6/22/06

Michael J. Wolkowicz — Date

Zhonglin Hao

Date

John C. Herr

6/12/06

John C. Herr

Date

Friederike L. Jayes

Date

Jagathpala Shetty

06/12/06

Date

Michael J. Wolkowicz

6/22/06

Date

List of Exhibits for Identifying, Isolating, Sequencing, and Characterizing Protein C58 (Exhibit A and Exhibits 1-68):

Exhibit A- Curriculum Vitaes of Zhonglin Hao, John C. Herr, Friederike L. Jayes, Jagathpala Shetty, and Michael J. Wolkowicz

Exhibits 1-68	Description (Date, Page Number in Laboratory Notebook, and Content)
1	8/12/99, page 39, provides labeled image of 2D-gel identifying testis proteins by number, including C58 protein.
2	8/15/99, report number 400, sequence analysis of 22 2D gel bands from 8/11/99, summarizing in Table 1 the sequences of the four tryptic peptide fragments of C58 cored from the gel of Exhibit 1.
3	8/15/99, page 42, shows selection of EST used based on tryptic peptide sequence of C58.
4	8/26/99, page 43, demonstrates the PCR strategy and results of the PCR preparation and analysis using the EST shown in Exhibit 3.
5	9/7/99, page 48, demonstrates the results of sequencing the partial C58 nucleic sequence obtained from Exhibit 4.
6	9/7/99, page 50, (as well as Exhibits 7-34) demonstrates cloning of C58/screening of library using vectors prepared from Exhibits 4 and 5. This Exhibit and the Exhibits through Exhibit 34 include screening the libraries twice (1° and 2° screening) and preparing to sequence C58 (sequencing twice to ensure accuracy).
7	9/8/99, page 51, demonstrates further studies related to cloning C58.
8	9/8/99, page 52, demonstrates progression of cloning C58
9	9/9/99, page 53, demonstrates dilutions and sketches of plates used in the plating/cloning.
10	9/9/99, page 54, describes transfection studies for cloning C58
11	9/9/99, page 56, describes labelling DNA
12	9/10/99, page 57, describes library screening, including membrane lifting and cross-linking

13 9/10/99, page 58, describes library screening, including preparation of plates and protocol for prehybridization protocol

14 9/10/99, page 59, describes membrane handling and addition of prehybridization solution

15 9/10/99, page 60, describes preparation and use of DNA purifying column, etc.

16 9/10/99, page 61, describes collection of DNA and hybridization

17 9/11/99, page 62, describes washing the membrane

18 9/11/99, page 63, describes preparing for exposing the membrane

19 9/11/99 and 9/13/99, page 64, describes exposing the membrane to film and preparation of exposed film

20 9/13/99, page 65, describes marking spots to be picked from plates, etc.

21 9/14/99, page 66, describes secondary screening

22 9/14/99 and 9/15/99, page 67, describes DNA labeling and secondary lifting

23 9/15/99, page 68, describes prehybridization and hybridization protocols

24 9/16/99 and 9/17/99, page 69, describes washing and exposing membranes and developing film

25 9/20/99, page 70, describes cell inoculation and clone picking

26 9/20/99, page 71, continues the protocol from Exhibit 25 up to plating on LB-agar plates

27 9/21/99, page 72, describes observing plates inoculated on previous day and inoculation of cultures

28 9/22/99, page 73, describes isolating DNA from plasmids

29 9/22/99, page 74, further describes the procedure begun in Exhibit 28

30 9/22/99, page 75, describes plasmid digestion and preparation for inserting new insert

31 9/23/99, page 77, describes sequential digestion of DNA

32 9/24/99, page 78, describes agarose gel electrophoresis of digested DNA and disclose an image of the gel

33 9/30/99, page 79, discusses the results of the ongoing sequencing and further preparation of bacterial cultures

34 9/25/99, page 80, describes plasmid isolation and preparation of plasmid DNA

35 **10/5/99**, page 82, provides a summary of the sequence analysis which had been ongoing for one of the C58 clones, and provides the entire nucleic acid

sequence of C58 had been found, including the ORF. The sequence was then used to deduce the amino acid sequence.

36 **10/6/99**, page 83, discusses the various attempts at sequencing different C58 clones

37 **10/6/99**, page 84, provides both the nucleic acid and amino acid (SEQ ID NO:16) sequences of C58, including the entire 124 amino acid sequence

38 10/29/99, page 85, describes ongoing work for preparing C58 ORF DNA.

39 11/2/99, page 86, describes the use of PCR to generate C58 complete with ORF and provides an image of the results of a gel analysis of the products

40 11/16/99 and 11/17/99, page 89, demonstrates ongoing studies to prepare and amplify DNA

41 11/17/99, page 90, demonstrates another image of an agarose gel

42 11/18/99 and 11/19/99, page 91, demonstrates further cloning, including preparation of competent cells and transformation

43 11/19/99, page 92, further describes the protocol which begins on Exhibit 42

44 11/19/99 and 11/20/99, page 93, describes plating of cells and picking colonies

45 11/22/99 (appears to have been 11/21), page 94, describes plasmid DNA isolation

46 11/21/99 and 11/22/99, page 95, describes the continuation of the procedure of the previous page (Exhibit 45), as well as resuspending isolated DNA

47 11/22/99 and 11/23/99, page 96, demonstrates plasmid digestion and electrophoretic analysis of the digested DNA

48 11/22/99, page 97, describes preparation of DNA from clone 4 for use in sequencing and then more bioinformatic analysis

49 11/23/99, page 98, has a taped in sequence analysis which was performed using the DNA from Exhibit 48 and completed on 11/29/99 at 14:35 checking the insert and petc58.promoter.dna sequence based on 2 enzyme cuts (NCOI and XHOI).

50 11/25/99, 11/26/99, and 11/29/99, page 99, describe cell culture, plasmid DNA isolation, and electrophoretic analysis from pET28b-C58-Novablue (#4)

51 11/23/99, page 100, provides summaries taped into the notebook which were the results of ongoing analyses of the proposed architecture of C58 (see upper

figure, i.e., taped in Fig. 8) and a taped in schematic (lower panel) suggesting C58 is GPI-anchored

52 11/23/99, page 100 (this was the carbon page used to tape an additional insert), demonstrates the results of a sequence alignment study of C58 comparing it with other Ly6/UPAR family members

53 11/29/99, 11/30/99, and 12/1/99, page 01 (new notebook), demonstrates the first of several studies to express the C58 protein in bacteria. The bacterial expression studies continue through Exhibit 63 (new notebook page 13).

54 12/1/99, page 02 (new notebook), demonstrates a continuation of Exhibit 53 summarizing the bacterial expression studies

55 12/3/99, page 03 (new notebook), demonstrates bacterial lysate preparation and electrophoresis as part of the ongoing expression studies

56 12/3/99, page 04 (new notebook), isolation and preparation of protein for electrophoresis

57 12/4/99 and 12/6/99, page 05 (new notebook), electrophoresis and preparation for western blotting

58 12/4/99, page 06 (new notebook), demonstrates an electrophoretic image of the results of the first bacterial expression studies, and no expression was found

59 12/10/99, 12/11/99, 12/12/99 and 12/13/99, page 9 (new notebook), demonstrate preparation of different clones

60 12/13/99, page 10 (new notebook), demonstrates transformation

61 12/15/99, page 11 (new notebook), demonstrates the protocol of a new electrophoretic analysis of bacterial lysates with the C58 clone

62 12/15/99, page 12 (new notebook), demonstrates an image of a gel prepared from Exhibit 61

63 12/15/99, page 13 (new notebook), demonstrates the map summarizing lane loading to examine bacterial expression of C58

64 12/15/99, page 14 (new notebook), demonstrates the protocol and preparation of reagents to be used in Northern blot analyses to determine whether C58 is testis specific

65 12/15/99, page 15 (new notebook), provides copies of the various protocols used in the Northern blot analyses of C58 expression

66 10/16/99 (should be 12/16/99), page 16 (new notebook), describes probe preparation for Northern blot analysis of C58 expression and the hybridization and wash steps

67 12/16/99, page 17 (new notebook), continues from Exhibit 66 describing the wash procedures, and film exposure

68 12/18/99, page 18 (new notebook), demonstrates an image of the Northern blot prepared in Exhibits 66 and 67, demonstrating that C58 message is detectable in testis, but not in spleen, thymus, prostate, ovary, small intestine, colon, or leukocytes.

Curriculum Vitae of Zhonglin Hao, MD., PhD Last update 3/1/06

Current Status:
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Personal Data
Married to Mei Hong (Lab and research practitioner IV in Mercer University), Daughter Shirley Hao (11/17/1990) and Son James J Hao (12/9/2002). Phone: 478-986-5576. Mobile: 478-319-9979 Email: zhonglin_hao@yahoo.com

Education

1981-1986	Inner Mongolia College, Hohhot, China,	MD.
1986-1989	Tianjin Medical College, Tianjin, China	Master of Science.
1994-1998	University of Tokyo. Tokyo, Japan	PhD.

Academic, Postdoctoral and Postgraduate Experience

1989-1993	Division of Medical Science, Tianjin Institute of Medical and Pharmaceutical Sciences. Research assistant.
1993-1994	Department of Biochemistry, University of Tokyo, SASAKAWA fellow.
1998-1999	Department of Biochemistry, University of Virginia, Postdoctoral fellow.
1999-2004	Department of Cell Biology, University of Virginia, Berlex fellow, Schering AG fellow.
2004-	Internal Medicine Resident, Mercer University School of Medicine

Professional Associations
American Society of Cell Biology (ASCB)
Society for the Study of Reproduction (SSR)
American Medical Association
Bibb County Medical Association

United States Medical License Examiner (USMLE)
Step 1 225 (91) passed Nov 27, 2002
Step 2 212 (86) passed Aug 27, 2003
TOEFL 257 (613) taken Aug 11, 2003
CSA passed Nov 4, 2003
ECFMG certificate valid indefinitely.
Step 3 192 (78) passed Mar 10, 2005 in the intern year

Examples of Research Interest

Curriculum Vitae of Zhonglin Hao, MD., PhD

Tissue specific gene expression
Cancer testis antigens
Targeting therapy of cancer
Small molecule inhibitors of kinases
Translational research

Awards

1993-1994 SASAKAWA Scholarship for Medical Practitioners and Researchers
1994-1996 Ito Foundation for Educational Exchange Award.
1997 Hirose International Scholarship
1998 Sumitomo Life Insurance Scholarship

Graduate students and postdoctoral fellows supervised

Karin Markgraf, Postdoctoral Fellow in Dr. Herr's lab 2000
Binfanf Xu, Postdoctoral Fellow in Dr. Herr's lab
Tresa Thompkins MD/PhD Student in Dr. Herr's lab

Publications

1. **Zhonglin Hao, Bingfang Xu**, Kula N. Jha, Laura Digilio, Craig Urekar, Silvia Pulido, Charles J. Flickinger, John C. Herr Interaction of human TSSK2 and TSKS: sperm centrioles localization of human TSKS, JBC submitted

2. **Zhonglin Hao** and Harold Katner Disseminated Cryptococcosis in a Patient with Idiopathic CD8 T- lymphocytopenia American Journal of Medical Science, Submitted Jan 2006

3. **Hao Z**, Lane JE, Mathis D. What caused these cutaneous lesions and altered mental status. Skin and Aging 2005; 13: 60-64.

4. **Zhonglin Hao**, Kula N. Jha, Young-Hwan Kim, Soumya Vemuganti, V. Anne Westbrook, Olga Chertihin, Karin Markgraf, LaRhonda Jackson, Charles J. Flickinger, Michael Coppola, John C. Herr and Pablo E. Visconti Expression analysis of the testis specific ser/thr kinases (TSSK) human homologues. A TSSK member is present in the equatorial segment of human sperm. 2003 Mol Hum Reprod 2004 Jan 10(6)433-44.

5. Jagathpala Shetty, Michael J. Wolkowicz, Laura C. Digilio, Kenneth L. Klotz, Friederike L. Jayes, Alan B. Diekman, Anne V. Westbrook, Erin M. Farris, **Zhonglin Hao**, Scott A. Coonrod, Charles J. Flickinger, and John C. Herr SAMP14, a novel, acrosome membrane associated, GPI anchored member of the Ly-6/uPAR receptor superfamily with a role in sperm-egg interaction J. Biol. Chem., Aug 15, 2003; 278(33)30506-15.

6. Wright PW, Bolling LC, Calvert ME, Sarmento OF, Berkeley EV, Shea MC, **Hao Z**, Jayes FC, Bush LA, Shetty J, Shore AN, Reddi PP, Tung KS, Samy E, Allietta MM, Sherman NE, Herr JC, Coonrod SA. ePAD, an oocyte and early embryo-abundant peptidyl-arginine deiminase-like protein that localizes to egg cytoplasmic sheets. Dev Biol 2003 Apr 1;256(1):74-89.

7. **Zhonglin Hao,** Stoler MH, Sen B, Shore A, Westbrook A, Flickinger CJ, Herr JC, Coonrod SA. TACC3 expression and localization in the murine egg and ovary. Mol Reprod Dev 2002 Nov;63(3):291-9.

8. Zhonglin Hao, Michael J. Wolkowicz, Jagathpala Shetty, Ken Klotz, Laura Bolling, Buer Sen, Anne Westbrook, Scott A Coonrod, Charles J. Flickinger and John C. Herr. SAMP32, a Testis-specific, Isoantigenic Acrosomal Memberane-associated Protein. 2002 Biol Reprod. 66:735-744.

9. Tanaka Koichi, **Zhonglin Hao,** Mihoko, Kai and Hiroto, Okayama. Establishment and maintenance of sister chromatid cohesion in fission yeast by a unique mechanism 2001, Oct 15, EMBO J 20(20)5779-5790.

10. Pablo E. Visconti, **Zhonglin Hao**, Marie Purdon, Paula Stein, Binaifer R. Balsara, Joseph R. Testa, John C. Herr, Stuart B. Moss and Gregory S. Kopf. Cloning and chromosomal localization of a gene encoding a novel serine/threonine kinase belonging to the subfamily of testis-specific kinases. Genomics. 2001 Oct;77(3):163-70.

11. Yan-fen Hu, **Zhonglin Hao** and Rong Li, 1999 Chromatin remodeling and activation of DNA replication by an acidic transcription activation domain from BRCA1. Genes Dev. 13:637-642.

12. **Zhonglin Hao**, Akemi Furunobu, Akihisa Nagata and Hiroto Okayama, 1997 A zinc finger protein required for stationary phase viability in fission yeast. J. Cell Sci. 110(20):2557-2566.

13. Mei Hong, Zupei Cheng, **Zhonglin Hao** and Tai Ma 1989 Brain damage of rat by severe iodine deficiency and the protective effects of thyroid hormone. Chin. J. Int. Med. 28(8):454-458.

Curriculum Vitae of Zhonglin Hao, MD., PhD

Professional training related to patient care

1. Teaching and patient contact while studying in the Department of Pathophysiology from 1986-1989.
2. Clinical Observer Status in the Division of Cardiology, Department of Internal Medicine sponsored by Dr. Coleen A McNamara Associate professor of Internal Medicine since Oct, 2003.
3. ACP meeting, Georgia chapter, Savannah Mar 11-14.

Patent developed in UVA

1. Inventors: J C Her, P Visonti, Z Hao, G Kopf "Human testis specific serine/threonine kinase" filed Nov 9, 2000. PCT filed Nov.9, 2001.

2. Inventors: J C Herr, J Shetty, F Jayes, Z Hao, M Wolkwicz, " Sperm specific proteins." Filed Jan 19, 2000, PCT/US01/01717 filed Jan 19, 2001, US Canada, Japan Austrilia, EPO.

3. Inventors: J C Herr, P Visconti, A Wagenfeld, M A Coppola, Z Hao, S Vemuganti "TSSK4: A Human Testis Specific Serine/Threonine Kinase" Filed Jan 8, 2004. U.S. Utility Patent Application No. 10/754/829

Abstracts

1. **Hao Zhonglin** , Akeme Furunobu, Akihisa nagata and Hiroto Okayama, A zinc finger protein required for stationary phase viability. Joint annual meeting of the Japanese biochemical and molecular biological society. August 26-30, 1996, Sapporo Japan.

2. **Zhonglin Hao**, Scott Coonrod, Amy Shore, Buer Sen, Anne Westbrook,Charles J Flickinger and John C. Herr Cloning of TACC3 from Mouse egg Proteome. Frontiers in Reproduction, June 16-19, Boston MA.

3. **Zhonglin Hao**, Michael J. Wolkowicz, Jagathpala Shetty, Ken Klotz, Buer Sen, Charles J. Flickinger and John C. Herr. Cloning and Characterization of Putative Human Sperm Membrane Antigen Related to Circumsporozoite (SMARC32). SSR 33rd Annual meeting July15-18, 2000 Madison, Wisconsin.
4. **Zhonglin Hao**, Michael J. Wolkowicz, Jagathpala Shetty, Ken Klotz, Scott Coonrod, Laura Brolling, Buer Sen, Anne V. Westbrook, Charles J. Flickinger and John C. Herr. SAMP32, a novel, testis-specific, membrane-associated protein, is localized to the acrosome of human spermatozoa. SSR 34th Annual meeting July 28-Aug 1, 2001, Ottawa, Ontario, Canada.

5. **Zhonglin Hao**, Karin Markgraf, Anne Westbrook, Charles J Flickinger, John C Herr and Pablo Visconti. A conserved family of protein kinases and a kinase substrate involved in human spermatogenesis. the 41st American Society for Cell Biology annual meeting in Washington, DC, December 8-12, 2001.

Platform presentation

Zhonglin Hao, Michael J. Wolkowicz, Jagathpala Shetty, Ken Klotz, Scott Coonrod, Laura Brolling, Buer Sen, Anne V. Westbrook, Charles J. Flickinger and John C. Herr. SAMP32, a novel, testis-specific, membrane-associated protein, is localized to the acrosome of human spermatozoa. SSR 34th Annual meeting July 28-Aug 1, 2001, Ottawa.

Invited Presentations

Beirne B Carter Center for Immunology. Research in Progress Aug 2001
"A family of Testis Specific Serine/Threonine Kinases Conserved in Mammalians"

References

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Harold Katner, MD. Professor of Medicine FACID, Department of Medicine, Mercer University School of Medicine, Macon, GA 31208 Email: KATNER_HP@mercer.edu Tel: 478-952-6957